IN THE

United States Patent Office.

THOMAS B. LAMBERT

vs.

THOMAS A. EDISON.

Interference No. 20,534.

Brief for Edison.

Before the Honorable Commissioner of Patents.

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BRIEF FOR EDISON.

BEFORE THE HONORABLE COMMISSIONER OF PATENTS.

Statement.

Although Lambert has a patent (the application for which was filed August 14, 1899), yet the application of Edison (filed March 5, 1898), antedates that of Lambert by almost a year and a half. The issue is the first claim of the Lambert patent, which was suggested to Edison by the Examiner while the Lambert application was pending, but an amendment embodying the claim, submitted by Edison, was not received by the Office, and the Lambert patent, therefore, issued. Lambert, however, is obviously the junior party. Priority of invention has been awarded to Edison by the Examiner of Interferences and by the Examiners-in-Chief, the decision of the latter tribunal being exceptionally full and complete. We commend that decision to the Commissioner as embodying a complete exposition of our own views on the case.

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The Invention.

The interference relates to a process for duplicating phonographic records from a matrix carrying on its bore a mathematically accurate negative. This matrix is made by both parties by an old and well-known process of electrodeposition. In order that the original wax record to be duplicated may be electro-plated it must be first rendered electrically conductive. The conductive coating used by Lambert is described in his patent only as "a coating of carbon B, or other electric conducting material." Manifestly, the carbon particles must be extremely finely divided if a sufficiently thin and uniform coating is to be secured, because, as is known, phonographic records are microscopic in character, the maximum depth of the record waves, according to Lambert, being less than one one-thousandth of an inch (Lambert Record, p. 58, x-Q. 38). Edison originally attempted to make use of graphite for the preliminary coating, but found that the duplicates produced thereby were not commercially perfect, and he so stated in a letter to the Office dated July 6, 1898—long before the filing of the Lambert application. In his application, however, he has fully disclosed the employment of graphite for the preliminary coating of the original or master record. The preferred preliminary coating used by Edison is secured by a process of vacuous deposit described and claimed by him in patent No. 526,147, dated September 18, 1894, since in this way a film can be secured of almost infinitesimal thinness—*i. e.*, "about $\frac{1}{100,000}$ of an inch thick, as blue light can be seen through the gold" (Edison Record, p. 13, Re-d. Q., 58).

In a generic sense, the preliminary coating of the original or master record with a vaporized metal, as with Edison's preferred procedure, is the same as the application of a conducting layer of finely-divided carbon, as Lambert describes, since the purpose of such coating is the same in one process as in the other.

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Having applied a conductive coating to the master record, both Edison and Lambert electroplate thereon to form a suitable matrix, from which the master is removed by shrinking or melting it out, after which the shell is backed or strengthened by a jacket fitted thereon.

In securing copies from the matrix, Edison introduces an ordinary phonograph blank within the same, and subjects the matrix with the blank therein to heat. Since the blank has a higher coefficient of expansion than the matrix, it will expand into engagement with its bore to receive an impression from the negative copy. Finally, a tapered mandrel is forced into the blank to expand it more intimately into engagement with the matrix, which mandrel is then withdrawn, and the resulting copy removed by first shrinking it radially, and then withdrawing it longitudinally from the matrix.

The essential purpose of applying heat to the blank with Edison's process is to expand it into engagement with the record surface of the matrix, but it will, of course, be impossible to so apply the heat as not to somewhat soften the material to facilitate the taking of the impression. The heat does not, however, make the material so plastic as to destroy its friability, or, as Edison expresses it, make it " putty plastic " (Edison Record, p. 14, Re-d. Q. 69). Claims have been allowed to Edison which dominate the issue, and which are not limited to the application of any specific heat, or, in fact, to the application of heat in any degree whatever, and the Edison application states that duplicates can be obtained by the use of the tapered mandrel alone. Owing to the specific character of the issue, it is necessary for us only to considered the preferred process employed by Edison, where the application of heat is supplemented by the expanding effect of the mandrel.

Lambert, in making duplicates from his matrix, follows the same generic process which had been previously suggested by Edison. He says in his patent:

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> "I next take a soft ring of cellulose or vulcanized rubber, either in a raw or partially cured state, or previously softened with some solution, and of sufficient thickness to receive in perfect form the indentations of the matrix and at the same time furnish a suitable backing or support for the phonographic reproduction of the record. This relatively thick ring or tube is then placed within the cylindrical opening of the matrix, and by means of an expansive pressure with heat forced outwardly, completely filling the matrix and against the inner surface thereof, thus making a counterpart of the same and a record similar to that on the original wax cylinder. The ring thus formed having on its outer face a faithful imprint of the matrix, is then allowed to harden either naturally or by artificially curing the substance thereof, through which hardening it shrinks sufficiently to enable its subsequent removal to be made from the matrix without injury to either."

The Edison and Lambert processes are, therefore generically identical and embody the carrying out of the following steps in the same sequence:

FIRST. Making an original master on a wax blank.

SECOND. Applying a film of conducting material to the master—*i. e.*, Edison's vaporized metal and Lambert's finely divided carbon.

THIRD. Electroplating the master.

FOURTH. Removing the master from the shell.

FIFTH. Applying a jacket or sleeve to strengthen the electroplated shell.

SIXTH. Introducing within the matrix a blank of the desired material, sufficiently soft to receive an impression, cellulose and vulcanized rubber being alone referred to by Lambert, while the list of suitable mate-

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rials mentioned by Edison is greatly extended, and includes not only the ordinary phonographic record compositions, but also vulcanized hard rubber and celluloid (see p. 5, Edison Specification).

SEVENTH. Expanding the blank into engagement with the matrix surface—*i. e.*, by the employment of heat alone, or by the use of an expanding mandrel alone, or by both (Edison process), or by "an expansive pressure with heat" (Lambert process).

EIGHTH. Contracting the resulting duplicate radially; and

NINTH. Removing the duplicate from the matrix by a direct longitudinal movement.

The Issue.

> "The method of producing record cylinders for phonographs, which consists in first forming a record on a cylinder of wax or other relatively-soft material, rendering the surface of the wax cylinder electrically conductive, and electrolytically depositing metal thereon forming a matrix, and then outwardly expanding, under pressure within the matrix, a cylinder or tube of softened material sufficiently thick to maintain its shape during and after the act of disengagement from the matrix, and finally removing the cylinder or tube by direct longitudinal movement."

After very critically examining this issue, and comparing it with the Lambert specification, in order that its exact meaning might be ascertained, the Examiners-in-Chief, in their decision, say:

> "This issue is not confined to the use of any specifically named material for the blank, neither to cellulose, to celluloid nor to vulcanized rubber. It may include wax.

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"Nor is it confined to any specific means for effecting uniform expanding pressure within the matrix. It may include a dynamic means.

"As described in the specification, the process is one in which the tube of softened material is made soft before it is put into the matrix. But the claim here—the issue—is not limited to that time or place for the formation of the softened material. All the issue requires in this respect is that the softened tubular material shall be outwardly expanded under pressure within the matrix. This condition of the issue is satisfied equally whether the tubular material be made soft before or after it is placed within the matrix.

"So the issue is generic as to the kind of softened material, the time when or place where the tubular material is softened, and the means for effecting the expanding pressure within the matrix."

Is There an Interference in Fact?

After the preliminary statements were opened, a motion to dissolve was presented by Lambert, based on the grounds, first, that with the Edison process the step of "rendering the surface of the wax cylinder electrically conductive" was not employed, and, second, that with the Edison process the blank was not made of "softened material." The motion to dissolve was referred to the Primary Examiner, who, in his decision of August 22, 1900, after referring to the fact that Edison describes the preliminary application of a carbon coating, but prefers the vacuous deposited film, said:

"The process of vacuous deposition is old, having been described in a patent granted to Edison September 18, 1894, No. 526,147. The use of this process for forming a matrix for duplicating phonograph records is also old, as shown in Edison's patent No. 484,582, dated October 18, 1892.

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> In patent No. 526,147 it is said that the vacuous deposit may be made very thin, and in the affidavit of Charles N. Wurth filed in Edison's present application September 2, 1898, it is said that in the process of this application as practiced in Edison's laboratory the vacuous deposit is an infinitesimally thin coating of metal on which a heavier coating of metal is formed by electroplating. This thin coating of metal, formed by a vacuous deposit in Edison's process, seems to be the equivalent of Lambert's thin coating of carbon or other electric conducting material."

The Examiner was not only right in deciding that the processes described by Edison and Lambert for making the matrices are generically identical, but that process was known and of public record long prior to Lambert's application, being fully described, for example, in Edison's patent No. 484,582, above referred to, and also in British patent to Young No. 1478 of 1894, to which we shall presently make reference. Neither party, in fact, claims any novelty in the manufacture of the matrix, and the issue would be just as patentable if the preliminary step of making the matrix were omitted.

On the point whether the Edison process employs a blank of "softened material," raised by Lambert's motion to dissolve, the Examiner in his decision said:

> "By the preferred form of Edison's process, then, a cylinder of celluloid is introduced into the matrix, and the two together, heated to such a point—according to Wurth's affidavit, about 115 degrees—as to cause the blank to engage the matrix, when a tapered mandrel is forced out into the cylinder, pressing it more tightly against the matrix. It is a well-known property of celluloid that at very low temperatures it is comparatively hard and more or less brittle, and that as the temperature is increased it gradually softens, reaching a state of plasticity somewhere below the boiling point of water. While, therefore, Edison may not heat his celluloid blank sufficiently to render it

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> plastic, yet the heating would inevitably soften it more or less from the very nature of the material employed."

Lambert appealed to the former Commissioner, Mr. Duell, who, in a brief memorandum, referring generally to the Examiner's decision, said :

> " I agree with him, that when the specifications are examined, the conclusion that naturally follows is that the language warrants the deduction that both parties originally disclosed the same patentable method."

So far as the question of interference in fact and of Edison's right to make the claim was concerned, we supposed that that question was not open for consideration after the affirmation by the former Commissioner of the Examiner's decision. Lambert, however, has argued before the Examiner of Interferences and before the Examiners-in-Chief, and will no doubt make the same argument before the Commissioner, that an interference in fact does not exist, basing his position on the same grounds on which his unsuccessful motion for dissolution was founded. These arguments will be briefly discussed.

1.

Does the Edison process include the step of " rendering the surface of the wax cylinder electrically conductive " ?

(a) On the motion to dissolve, the Examiner decided this question affirmatively, and his decision was sustained by the Commissioner.

(b) The original specification (pp. 1-2), after referring to the making of the master record on a wax blank, states that the blank is coated by the process of vacuous deposit,

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> " forming a layer of metal thereon which follows accurately all the indentations of the record, however minute,"

and says :

> " The vacuous deposit is continued until the layer of metal is sufficiently thick, when the covered phonogram is removed from the vacuum chamber and is further covered by a more rapid process to give strength and body to the covering. A further covering of metal may be produced by electroplating a metal upon the vacuous deposit in the usual manner of electroplating."

The original specification, at the bottom of page 2, also described the identical process of Lambert :

> " A specially prepared plumbago of exceedingly great fineness might be employed to cover the waxlike surface as a basis for the electroplating, or gold leaf or silver salts reduced by chemical reagents to the metallic state might be used for the same purpose."

(c) In the affidavit of Wurth (pp. 1, 2), filed in the Edison application on September 1st, 1898, the Edison process as actually carried out long prior to Lambert's application date is thus described :

> " That process consists in first taking a phonogram blank having a record thereon, in plating an infinitesimally thin coating of metal on the blank by the electro-vacuum process described by Mr. Edison in his patent No. 526,147, dated September 18, 1894, in then electroplating a heavier layer of metal on the vacuous coating referred to, and in then backing up the electro-deposit by a suitable metal to form a matrix or mold of the desired thickness with the record carried on its bore in relief."

(d) In the decision of the Examiners-in-Chief (pp. 10, 11) they say :

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"This process is attacked by Lambert on the ground that the thin deposit of gold or silver is not a deposit for rendering the wax blank electrically conductive. The witnesses for Edison testify that it is. The principal Examiner has held it to be that, and an equivalent for that purpose of the plumbago used by Lambert, notwithstanding that the plumbago does not, and the gold or silver does, become incorporated in the body of the matrix. Of this Edison testified as follows:

'Re-d. Q. 59. And I understand that that vacuous deposit is used only as a conducting coating for the coating of the electrolytic deposit?

"A. Yes, sir.

"And Charles Wurth testifies:

"'x-Q. 69. Now, as regards the making the matrix, the deposit *in vacuo* of a metallic film upon the original master was done for the purpose of getting and forming the indentation of the matrix?

"'A. Yes, sir; getting the conducting metallic surface on the master.

"'x-Q. 70. Now, the electroplating on that was to form a backing and support for that electro-vacuous deposit?

"'A. No, it is not exactly like that. The plating in vacuum is to give the master record a metallic conducting surface, so that the copper will deposit on there, because the wax itself is non-conducting; it wouldn't deposit on the bare wax.'

"Besides, both Edison and Charles Wurth testify that they first used plumbago as a conductive coating and abandoned it for their present method of getting such coating."

(e) As we have before said, the process of making matrices described by both parties, was of public record long before the Lambert application. Thus, in British patent to Young No. 1478 of 1894, the patentee says:

"I carry my invention into effect by first producing a record upon a wax cylinder by means of a recording stylus in the usual way, and this I carefully coat with plumbago or other suitable material, capable of rendering the said wax surface of

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> good electrical conductivity * * * and then suspend the whole (or such part thereof as may be necessary) in an electrical plating bath * * * and by this means I coat the record with a metallic surface, and * * * I fix the same rigidly within and upon an outer cylindrical or other shaped case of metal or other material capable of maintaining the stability of the electro."

2.

With the Edison process is the blank made of softened material?

Before considering the points of our argument relative to this question we call the Commissioner's attention to the fact that the Examiners-in-Chief have made a very elaborate inquiry into the exact meaning of "softened material" as used in the issue, and regard it

> "as including any material otherwise suitable which is normally harder than it is made to be when subjected to the expanding pressure within the matrix."

(a) This question has also been answered affirmatively by the Primary Examiner, from whose decision we have before quoted. We see no escape from the Examiner's conclusion that, since, with the Edison process, heat is applied to the blank, the latter must be softened to some extent, and sufficiently to take an impression from the matrix. When that is done all the conditions of a practical process are complied with. If we do not accept the Examiner's conclusion as correct, we have to decide that the application of heat to an amorphous material like wax or celluloid does not soften it. That, of course, would be absurd. Any material of this nature, if subjected to the application of intense cold, is extremely hard and friable, and it gradually becomes softer as its temperature is raised, until it finally loses its solid condition and is converted to a liquid. Edison says :

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> " Their viscosity is increased by heat, like all other materials."

And in the same answer he calls attention to the interesting fact that ice under normal conditions is sufficiently soft to be plastic (Edison Record, p. 14, Re-d. Q. 69).

Terms relating to temperature and density of matter are absolutely comparative. A piece of melting ice, for example, is soft and hot, if we compare it with ice which has been subjected to the effect of liquid air.

(b) The Commissioner, Mr. Duell, in deciding Lambert's appeal on his motion to dissolve, specifically considered this question and quoted with approval the statement of the Examiner that

> " Hard and soft are purely relative terms, and it is necessary to examine the context in order to determine what they mean."

In other words, the Commissioner found, upon examining both applications, that it was only necessary that the material should be sufficiently soft to take an impression, and that is certainly done with Edison, as it is with Lambert. If it were not done—if the material were not softened—the process would be inoperative.

(c) The Examiner of Interferences, after considering both the applications and the testimony, said on the point:

> " The Examiner is unable to find, either from the argument of counsel or from the experts in this office, any ground upon which to hold that Edison did not soften his material when it was heated to the temperature alleged."

(d) In the affidavit of Wurth above referred to, in describing the Edison process as actually carried out before the filing of the Lambert application, he states

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(p. 6) that the blank is heated to a temperature of about 115 degrees Fahrenheit. It must be obvious that such a temperature would soften a wax or celluloid blank, as the Primary Examiner has said; of course, not so much as a temperature of 150 degrees, but more than a temperature of 100 degrees. At any rate, the Examiner of Interferences was clearly correct saying that

> "There has been introduced into the record no showing or proofs that the wax cylinders when heated to 115 degrees are *not* softened as contemplated in the issue of this interference."

This temperature of 115 degrees is that which was adopted by Wurth after years of experimenting, as we shall presently show, and it must follow, we submit, that with the materials with which the experiments were conducted the temperature indicated was regarded as most satisfactory for securing commercial results.

(e) The Examiners-in-Chief, in their decision (pp. 6–7), quote from Edison's caveat of October 26, 1888, where reference is made to "a blank cylinder of plastic [when hot] material," and they say:

> "The wax record is hot. Being hot it must have been somewhat softened. After it was softened by the heat the plunger within the matrix and blank effected the expanding pressure within the blank."

Here it will be seen the Examiners-in-Chief have adopted exactly the position of the Primary Examiner. The only difference between applicant's caveat description and that of his application is that the former refers to the blank as being "hot" and the latter as being "heated." We do not see that any distinction can be drawn between a *hot* blank and a *heated* blank, and

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if the Examiners-in-Chief were correct in deciding that the blank, being hot, " must have been somewhat softened," we are unable to see why it should not follow as logical conclusion that the *heating* of a blank produces the same effect.

(f) As to whether the *process* as actually carried out by Edison was distinguished from that described in his *application*, the Examiners-in-Chief, after referring to the testimony of Edison and Charles Wurth (pp. 11, 12), decide that :

> " The evidence is that the blanks *are softened* in this process.
>
> " There is no real contradiction between the averments of Wurth in his affidavit made during the prosecution of the application and his testimony in this proceeding. There is a difference of opinion between him and Edison as to what constitutes plasticity. Both agree that the wax cylinder is softened for the same purpose."

We again fail to see any distinction between the process as described by Wurth in his testimony and as it is set forth in the Edison application. Wurth, in referring to the point under discussion, says that after the matrix was formed,

> " we took a hollow core of brass and heated that with water, let hot water run through, and when it had a certain temperature I put the blanks in the mold right over the core and let the heat expand the cylinder—the blank—inside the mold " (Edison Record, p. 17, Q. 10).

In his application in interference, Edison, after referring to the manufacture of the matrix, says :

> " When the blank is thus placed within the matrix or mold, both the matrix and the blank contained therein are, or the blank alone is, brought to a higher temperature, whereby the blank will expand and will be brought into inti-

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mate contact with the interior surface of the matrix or mold, whereby the record contained therein will be impressed with absolute accuracy upon the surface of the blank" (Edison Specification, p. 3).

What difference is there to be drawn between these two descriptions? If the Examiners-in-Chief are correct in holding that, with the process as carried out by Wurth, the use of a heated core would soften the material, we submit that it follows—and the Primary Examiner and the former Commissioner have so held—that the heating of the blank, either alone or within the matrix, must produce a similar softening of the material.

(g) Although the question of a lack of interference, in fact, was strenuously argued at the hearing below, a majority of the Examiners-in-Chief, in their decision, declined to express any opinion as to this question "in the presence of the testimony of experts in handling wax records," and "for the reason that two tribunals of this Office have held that there is an interference, in fact, and have so held on the face of the applications."

It is true that one of the Examiners-in-Chief expresses doubt whether the wax of the Edison application is the equivalent of the "softened material" of the issue, but his doubt is not expressed in tangible form, so that it manifestly cannot be made the basis of an adequate argument. It strikes us that the doubtful member of the Appeal Board should have explained his views in such a way as to enable us to adequately consider them, and, in the absence of any definite reasons for his uncertainty, we submit that his signed statement at the conclusion of the decision of the Appeal Board is not entitled to serious consideration. If that statement had been based on adequate reasons, we believe that a satisfactory reply to any doubt or uncertainty which its writer might entertain

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is contained in the arguments which we have above presented. For our own part, we do not believe that there is any doubt but that an interference in fact exists and that the inventions of both parties are generically identical, and our view has been shared by the Primary Examiner, by the former Commissioner, by the Examiner of Interferences and by two members of the Appeal Board.

(h) Furthermore, since the Examiners-in-Chief apply to the expression "softened material" its usual and ordinary meaning, and as the Primary Examiner has affirmed Edison's right to make the claim, we submit that Lambert's contention that no interference in fact exists seeks practically a review of a decision from which, under the rules, there is no appeal. We recognize, of course, that the Commissioner may at any time review any decision of an Examiner; but, as stated by Mr. Commissioner Duell, in *Anderson and Dyer vs. Lowry* (C. D., 1899, p. 230, 235), his supervisory power

> "should be used in the treatment of cases of the class to which the present one belongs only where some extraordinary reason for such action is disclosed. His supervisory power is not to be exercised in an arbitrary or unlawful manner. * * * that power should be exercised with the greatest caution."

3,

We have given the reasons why, in our opinion Lambert's contention of a lack of interference should be disregarded. The practically unanimous prior decisions which have been rendered in the case should, we submit, remove this particular question from the realm of further discussion. It seems to us that it is absurd to argue that because an inventor, dealing with wax records, states that he subjects them to heat and

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fails to state that such records are softer after heating than before, it should be decided that such an omission amounts to a failure of adequate disclosure. There are some things that have to be taken for granted, and we submit that anyone is safe in assuming that when a waxlike material is subjected to heat it will be correspondingly softened. It seems to us that this follows as logically as that the rotation of a band wheel drives the belt which engages it.

Celluloid Records.

Both before the Examiner of Interferences and the Examiners-in-Chief, Lambert, argued with great earnestness that his patent and the issue are limited to a process for making celluloid records, and that Edison in his application does not describe a process adapted for that purpose. The fourth and fifth reasons of appeal intimate that the question will again be presented by Lambert before the Commissioner and that he will again urge that Edison has no right to make the claim as so construed.

1.

In declaring the interference the Examiner considered the issue, compared it with the inventions of Lambert and of Edison, and decided that those inventions interfere, and that the issue generically covers both. In considering Lambert's motion to dissolve, the Examiner again reviewed both inventions, and affirmed Edison's right to make the claim, and that decision was affirmed by the Commissioner.

2.

The issue is plainly not limited in terms to the manufacture of celluloid duplicates, but covers broadly the making of duplicates from any "softened material

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sufficiently thick to maintain its shape," etc. As the Examiners-in-Chief say in their decision, it is "limited neither to cellulose, to celluloid nor to vulcanized rubber. It may include wax" (p. 6).

Lambert, in his patent, mentions two materials of which the duplicates can be made—*i. e.*, cellulose and vulcanized rubber. Edison, in his application, mentions a greater number of materials for the purpose, and specifically refers to celluloid and vulcanized hard rubber.

3.

Lambert nowhere in his patent refers to the manufacture of *celluloid* blanks, but reference is made only to *cellulose*, which includes many materials within its definition (Lambert Record, p. 56, x-Q. 25). Lambert admits that it would be impossible to carry out his process with the ordinary forms of cellulose "untreated or uncombined with other materials" (x-Q. 26). *Celluloid*, on the other hand, is not cellulose; but, on the contrary, is a specific mixture made by treating a definite form of cellulose (gun-cotton) with nitric acid and camphor (x-Q. 29). A person reading the Lambert patent, therefore, would find absolutely no instructions for the use of *celluloid* or for the use of any particular form of cellulose; but independent experiment would have to be made to determine the special utility of celluloid, if, in fact, the use of that material is desirable. Edison does not apparently regard celluloid with as high a favor as Lambert, because on cross-examination he states that the records made by him of that material only "worked fairly well," and that they were a "little scratchy" (Edison Record, p. 9, x-Q. 28).

It seems to us, therefore, that any contention of Lambert that the issue in interference is limited to celluloid is illogical, since his own specification fails to mention that material in connection with the process.

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On the contrary, the Edison specification distinctly refers to celluloid as a material from which the records can be made.

4.

On the point whether, in fact, the Edison process can be carried out in conjunction with celluloid, the testimony is perhaps conflicting.

Lambert admits (Lambert Record, x-Q. 50, p. 62) that celluloid records can be made "by heat and pressure," and that "the heat may be applied to the entire blank;" but he says (x-Q. 55) that the application of heat by ordinary methods would "produce spontaneous combustion, especially at points where the celluloid was in contact with the atmosphere." Being then asked (x-Q. 56, p. 63):

> "Does celluloid take fire spontaneously at a temperature approximating that at which it becomes sufficiently plastic to receive an impression,"

he made an absolutely unresponsive answer:

> "I should say it takes fire or disintegrates when in contact with the atmosphere *at certain temperatures.*"

At best, Lambert's criticism of Edison's process when applied to celluloid is neither forceful or convincing. He merely expresses the opinion that the heat to which the blank is subjected would disintegrate it if records are to be made with perfect success (x-Q. 53, p. 62). His opinion is not supported, and he distinctly failed to answer the question if spontaneous combustion or disintegration of the celluloid took place "at a temperature approximating that at which it becomes sufficiently plastic to receive an impression." His answer that celluloid takes fire or disintegrates "at certain temperatures" may not have been intentionally disingenuous, but it is certainly unresponsive.

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As against these expressions of opinion on the part of Lambert, we have the statements of the Examiner and of the witness Charles Wurth, that the Edison process is fully operative with celluloid. The Examiner, in his decision on Lambert's motion to dissolve, it will be remembered, said:

> "It is a well-known property of celluloid that at very low temperatures it is comparatively hard and more or less brittle, and that as the temperature is increased it gradually softens, reaching a state of plasticity somewhere below the boiling point of water."

The witness Wurth, who has been carrying on the Edison process for a number of years, was cross-examined specifically as to the manufacture of celluloid records. We give his testimony on the specific point:

> "x-Q. 64. Did you ever make a celluloid copy by that process?
>
> "A. I did lately, last winter.
>
> * * * * * *
>
> "x-Q. 66. Did you, or did you not, soften any of these phonograms in making them, preliminarily?
>
> "A. Not preliminarily; they were not softened except to heat them so much that they would take the impression after they were introduced into the mold" (Edison Record, p. 26).

Wurth further testifies on the point:

> "x-Q. 78. Now, with your knowledge of the art, do you think, or did you think, it was possible to take a strip of celluloid, or a cylinder of celluloid, and place it within the mold or matrix, and expand it by heat alone to get an impression thereon?
>
> "A. Never possible. It takes a pretty strong pressure to make an impression on the celluloid.
>
> * * * * * *
>
> "x-Q. 82. In making a celluloid phonogram did you soften the celluloid phonogram before you placed it in the mold?

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" A. No, sir.

" x-Q. 83. Was it made by the process the same as the issue of this interference ?

" A. *I made it the same way as I made the wax duplicates.*

" x-Q. 84. Did you depend on pressure entirely to force it into the indentations ?

" A. Pressure and heating, of course.

" x-Q. 85. About what degree of temperature did you heat it to ?

A. " It must have been over 200."

When the testimony presented by Edison is compared with that of Lambert, we submit it must be held that the presumption is overwhelming that the process as described by Edison, without modification, can be applied to the manufacture of celluloid records, and that, in fact, such records were made by that process.

Edison's Case.

Edison bases his conception on a caveat filed by him October 26, 1888 (Edison Exhibit Extract from Edison Caveat), and which is printed in full on pages 38 and 39 of the Edison record. Concerning this exhibit the Examiners-in-Chief say " that it appears to disclose a conception of this broad issue." After his conception the process was first carried out by his laboratory assistant, Dr. Schulzberg (Edison Record, p. 7, Q. 13), and in the spring of 1889 the experiments were taken up by Charles Wurth already referred to, who has " been practically continually working on the process from that time until the present time " (Q. 50). Wurth, according to Edison's statement, made a great many matrices and reproduced a great many copies therefrom made by the interference process. Edison says that the purpose of these experiments was :

" To get it so that they could be manufactured cheaply in large quantities, and so that the matrices would be very perfect and without a flaw * * * it

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was essential that the records should be perfect. The process necessary to make a perfect matrix and the reproduction of duplicates from these matrices commercially and cheaply and perfectly is a matter of extreme difficulty, to preserve the exact quality and prevent any slight irregularities and ex.raneous noises due to imperfections " (Q. 17).

But, so far as the process in interference is concerned, Edison says that " it is the same now as it was when carried out by Dr. Schulzberg in 1888 " (Q. 18), and that Wurth's work from 1889 up to 1898, when the Edison application was filed, " was directed only towards the improve of small details to make it commercial " (Q. 19). In fact, Edison says that the duplicates made in 1891 " were perfect as far as quality was concerned, but there was some scratching of the cylinder, which was objectionable, and they were not quite as loud as the matrix should have given them and the expansion of the material in heating was not exactly as we desired it " (Q. 20).

Being asked if he considered the process commercially perfect at the time his application was filed in March, 1898 (Q. 21), he says :

> " The process of expanding the cylinder in the matrix and withdrawing it was perfected long before that, but the process as a whole was perfected by that time as a *commercial proposition.* By this I mean that the process was so far perfected that I was able to make absolutely perfect duplicate copies at a price that would make the process worth carrying out in competition with other methods. So far as the making of the mold and the expanding of a blank within the mold and the withdrawing of the blank longitudinally are concerned, they were just as perfect in October, 1888, as they are now."

Being asked what the duplicate copies made by the process are used for at the present time (Q. 22) he answered :

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"They are used as masters in the mechanical duplicating process, *because they are so perfect that they are indistinguishable from the original masters.*"

Edison says that he consulted with Wurth in reference to the process several times a week. "Whenever he would meet with a difficulty he would come to me and I would make suggestions, which he would carry out" (Q. 23).

Edison produces and identifies one of the original molds made by Dr. Schulzberg in 1888 (Edison Exhibit Original Schulzberg Mold) and also one of the duplicates made from this mold (Edison Exhibit Original Duplicate Copy). It appears from the stipulated evidence of Randolph and from the "Edison Exhibit Schedule of Work Done on Process," that up to March, 1898, "when the Edison application was filed, $29,-560.97 were spent on laboratory work on the commercial development of the processes and for the manufacture of molds from which duplicate copies were made, which were used as masters for mechanical duplicating."

Edison's testimony is fully corroborated by Wurth, who did the actual experimenting. The first matrix made by Wurth in the winter of 1888-89 is produced (Edison Exhibit First Wurth Mold). In 1889, 23 or 24 molds were made, representing a series from A to X (Edison Record, p. 19, Q. 16). Copies were made from these matrices at this time (Edison Record, Q. 17). A matrix made by Wurth in 1890 is also produced (Edison Exhibit Wurth Mold of 1890). In the winter of 1890-91 a second series of matrices were made, "numbered 1 to 87, and some lettered ones" (Edison Record, p. 20, Q. 25). A copy made in 1894 from one of the 1890 molds was produced (Edison Exhibit Wurth Duplicate from 1890 Mold). Other matrices were made in 1891, one of which is produced, containing a phonographic record called "The Song that Breaks my Heart" (Edison Exhibit,

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Wurth Mold of 1891). A record made from one of the 1891 matrices is also produced (Edison Exhibit Duplicate from 1891 Mold). With reference to the matrices which were made in 1890, Wurth states that from one of them alone he made more than *a thousand duplicate copies* (Q. 33).

Speaking generally of his experiments and being asked to what extent the processes may have varied (Edison Record, p. 22, Q. 39), Wurth said :

> " May be in pressing, heating more or less, or pressing more or less, or changing the sizes of the blanks, making them a few thousandths more or less, or the time—the time for pressing was the most delicate ; that took long experimenting to obtain the best results. But in all the processes which I carried out the matrix was made as I have described, and the copies were obtained therefrom by expanding under the presence of the heat, as explained."

It was, of course, unnecessary to produce specimens of all the matrices made by Wurth in his experiments, but matrices were produced which were made in the years 1893, 1896 and 1897 (Edison Exhibit Wurth Molds of 1893, of 1896 and of 1897 respectively). A matrix made in 1900 was also produced (Edison Exhibit Wurth Mold of 1900), with which the very earliest of the matrices compares very favorably.

Being asked how perfect were the records made in 1890, for example (Edison Record, p. 23, Q. 45), Wurth said :

> " At that time we used the ear tubes only, and not the horn, and the duplicates were loud enough for ear tubes, but not for horns. The quality was very good. Duplicates from a ' No. 75 ' are as good as those which are made now, though not quite as loud."

Referring generally to the lines on which these experiments were conducted up to the filing of the Edison application (Q. 46), the witness said :

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> " During all these years I was seeking to improve the quality and loudness of the duplicates, and to this end directed my attention to the making of the original masters, so that they would be more perfect, and to the perfection of the details of the process, by means of which there would be less liklihood of failure, since, owing to the very delicate operations, they have to be carried out under uniform temperatures and with great care. As I have already said, much of my time was also spent in experimental work with recorders by which the quality of masters would be improved, and also in work on reproducers for more loudly reproducing from the duplicates. This work occupied most of my time from 1889, when I started in on it, up to the present time."

The testimony of Edison and of Charles Wurth is fully sustained and corroborated by that of Aylesworth and of Albert Wurth. Edison, by his testimony, has proven that from the time of his conception until the filing of his application he was working on the process without practical interruption, with the view of commercially perfecting it, and that so far as reduction to practice is concerned, the process was actually carried out in October, 1888, by Dr. Schulzberg, under Edison's direction, from which time up to March, 1889, about 300 matrices were made (Edison Record, p. 35, Q. 51), from which from 6,000 to 8,000 duplicate were secured (Q. 52).

We submit the Edison case with complete assurance as showing an early reduction to practice, followed by patient and unremitting experiments for the commercial perfection of the process, regardless of expense. Edison might have filed his application in 1890, but he did not wish to do so until he was convinced that the process was one which could be carried out in successful competition with other methods. Edsion's testimony has been carefully scrutinized both by the Examiner of Interferences and by the Examiners-in-Chief. By the former tribunal it was held that Edison had prove n

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reduction to practice prior to Lambert's date of conception, while the Appeal Board, after summarizing the evidence, concluded :

> "It appears from this testimony that Edison successfully practiced this process on wax cylinders as early as 1891, and that he has since that time been engaged in perfecting it in details to make it industrially economical; and also that in 1899 he made celluloid records by this process."

Lambert's Case.

I.

Before considering the testimony of Lambert, it will not only be necessary, but interesting, to review the history of his application, in order that we may ascertain the reason for the precise language of the issue. When that application was filed, it contained no reference whatever to the making of copies from material "sufficiently thick to maintain its shape during and after the act of disengagement from the matrix." The original, first claim was practically identical with the issues, except that this limitation was omitted. These claims were rejected by the Examiner on the British Patent to Young before referred to. The process of the Young Patent is identical with that of Lambert's, with the single exception that with the former the duplicates were made on thin walled cylinders, which required to be collapsed in order to be withdrawn, instead of being formed on relatively thick blanks, which are contracted radially and withdrawn longitudinally.

In response to the objection of the Office, Lambert argued that the Young process was inoperative and that "the invention should be considered *de novo*, and applicant given protection, as if such unsatisfactory attempt had never been made." On November 4, 1899, the Examiner replied and quoted from a letter addressed to the Office by Young, the British patentee, who stated that his process was

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operative. Lambert then amended by limiting his claims to the employment of blanks made of "relatively thick material." He introduced the explanatory paragraph commencing at line 28, page 2, of his printed specification and he made this argument:

> "The use of a very thin substance, as required in the Young patent, is impracticable for several reasons. It will not receive perfect indentations, especially if they are well pronounced; it will not retain its cylindrical shape unless properly backed, *which is mechanically impossible;* and, even if such a thin record can be made, it is impossible to back and support it so as to avoid variations in its elasticity, because of imperfect contact with the backing, and these variations, producing corresponding imperfections in the record, will impair or destroy its usefulness. *Applicant has repeatedly attempted to produce records in accordance with the Young patent, but has never been able to produce a record in any sense practical or operative.*"

Without waiting to hear from the Office in reference to the claims as then submitted, they were amended by erasing the expression "relatively thick" and substituting substantially the expression of the issue—*i. e.*, "sufficiently thick to maintain its shape after disengagement from the matrix." In the next letter from the Office the Examiner criticised the claim as "somewhat awkwardly worded" and suggested the language of the issue, which, on January 22, 1900, was adopted by Lambert.

Thus it will be seen that Lambert, during the prosecution of his case, fully distinguished his process, wherein blanks are sufficiently to thick maintain their shape during and after the act of disengagement from the matrix, from the process of Young, wherein the records are made on thin-walled cylinders, which require to be subsequently mounted on cylindrical supports; and Lambert expressly stated that the latter processes are inoperative and that he had attempted, without success, to carry them into effect. It is im-

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portant to bear this in mind, because, since the issue is specifically limited to the employment of blanks having certain characteristics, Lambert's proofs must be restricted to that identical invention. Anything that Lambert may have done with processes like that suggested by Young, using thin-walled cylinders, is, of course, entirely outside of this controversy. When consideration is taken of this fact, we submit that Lambert's case must fail through insufficiency of proof, and that he could not prevail over Edison if the latter relied solely on his application date.

II.

Lambert says that the broad invention of making a duplicate phonographic record in celluloid was conceived by him some time in 1892, and was explained to the witness Taylor in 1893. Taylor does not appear in the case after the latter year. The early work which Lambert did was in connection with *sheet celluloid* (Lambert Record, p. 7, Q. 17; p. 8, Q. 21), and one of these strips as made by him in 1893 is introduced in evidence (Lambert Model, 1893). Lambert states that this "was originally a strip of celluloid approximately $\frac{1}{100}$th of an inch thick, such as was generally on the market at that time, the back of which has paper stuck to it" (Q. 54). Taylor corroborates Lambert only so far as the experiments relate to the making of duplicates on thin strips, and the witness claims to have spoken with Lambert with reference to the matter only during the year 1893. Taylor states that he "saw only the *strips*" (Lambert, Record, p. 33, x-Q. 6); that they were "probably 6 or 7 inches long; I cannot remember the exact length" (x-Q. 7); and that Lambert "expected to cement the ends of the strips together to make an endless band, and to use the endless band with an ordinary phonograph and reproducer" (x-Q. 10). The witness was asked (x-Q. 12):

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" Having reference now to the cylinders, did Mr. Lambert say, in 1893, that impressions were to be received upon the cylinders having their ultimate thickness, or were the impressions to be received upon a strip which was to be ultimately mounted upon some backing material ?

A. On that point Mr. Lambert was not thoroughly clear as to the results of either having a strip mounted on a supporting cylinder or pressing a thin strip the width of the length of the matrix, and then mounting on a support or backing, but he knew that the cylinder had to be self-sustaining in order to be a financial article. This was the thing that was put before me ; I remember that very clearly " (Lambert, Record, p. 34) :

Again, Taylor was asked (x-Q. 14) :

" But the point I want to get at is whether or not it was definitely stated to you by Mr. Lambert that the supporting cylinder with the strip was used during the time the impression was taken, or was the strip subsequently mounted upon the supporting cylinder ?

A. *The strip was subsequently mounted on a supporting cylinder after the impressions were taken thereon.*"

x-Q. 15. " And you say that when you saw Mr. Lambert, in 1893, he only showed you a strip, and not a cylinder made of a strip carried on a support ?

A. He only showed me a strip, and also a matrix, as I have already said."

From this there can be no doubt that all that Lambert showed to Taylor, or at least described to him in 1893, was what Young explains with greater fullness in his patent—namely, making an impression on a thin-walled cylinder and subsequently mounting it on a cylindrical backing. Moreover, Lambert admits that his making of the thin walled records in 1893 was the work he referred to when, in his letter to the Office, he said that he " had repeatedly attempted to produce records *in accordance with the Young Patent*,

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but has never been able to produce a record in any sense practical *or operative*" (Lambert Record, p. 18, x-Q. 2). So far, therefore, as the specific invention of the issue is concerned, the testimony of Taylor can be entirely disregarded, as it has no bearing on that particular process. On this point the Examiners-in-Chief in their decision say that "it is evident that he never disclosed the process to his witness Taylor (x-Q. 34), and Taylor's evidence does not show any disclosure of it to him."

When was it, then, that Lambert did conceive the specific invention of the issue? He says (Lambert Record, p. 19, x-Q. 8) that the necessity of making the record "with a mold sufficiently thick to retain its shape during and after the act of disengagement, as before said, is one that grew with the experimenting up to 1897, *when I gave up* attempting to use a thin material for practical work." He was asked (p. 20, x-Q. 11):

> "What I would like to find out, if possible, is when the idea first occurred to you of making the ring sufficiently thick to maintain its shape during and after the act of disengagement with the matrix. Can you tell me at what period in the development to which you refer you reached the conclusion that it was a necessary thing to be done in order that the process might be practical?
>
> A. According to my best recollection, that was in *1896*."

The same point is again brought out in his answer to x-Qs. 12 and 13. He admits that his disclosures to Taylor in 1893 (x-Q. 15), and to Hamilton in 1895 (x-Q. 16), referred only to the thin-walled cylinders, and hence such disclosures are outside of the controversy. On the question of conception, therefore, we have only the testimony of Lambert himself, and, instead of proving the date alleged in his preliminary statement (May, 1892), he admits that the specific invention of the issue did not occur to him until 1896, or more than seven years after Edison had actually reduced the invention to practice.

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III.

Conceding, for the sake of argument, that Lambert conceived the specific invention of the issue in 1896, he claims to have reduced the invention to practice in 1897 by the making of a section or portion of the duplicate copy, the walls of which are sufficient thickness to include the issue, and which model is introduced in evidence (Exhibit Lambert's 1897 Phonograph). We submit, however, that Lambert's testimony concerning his conception and reduction to practice is not sufficiently corroborated. Taylor must, of course, be excluded, as his testimony, on Lambert's own admission, has no bearing on the specific process of the issue. Lambert's testimony, if it is to be corroborated at all, must therefore find support in the evidence of Hamilton, the only other witness; and concerning Hamilton, we submit that his testimony not only does *not* make it clear that the invention of the issue was neither explained to him nor carried out in his presence by Lambert, but that on the contrary, the invention that was explained to him and reduced to practice was the Young process which, on Lambert's own admission, was impracticable and inoperative. When we examine Hamilton's deposition we find that his recollection of the making of the matrix of 1897 is exceptionally good; yet, when the question of the thickness of the blanks —the only vital point of the case—is considered, his memory utterly fails, and instead of sustaining Lambert, he leaves the case overshadowed with doubt and uncertainty. In fact, we believe that Hamilton's cross-examination leaves Lambert's case completely unsupported.

Hamilton was asked (p. 39, x-Q. 1):

> "You say, Mr. Hamilton, in describing the process which Mr. Lambert carried out in your presence in the fall of 1897, that he took a strip or sheet of celluloid and made a ring out of it; what was the thickness of this sheet?

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A. I do not know what the thickness was. *They were very thin—about like a sheet of paper;* perhaps a little heavier.

" x-Q. 2. After the impression was made on this ring of sheet celluloid, *was the celluloid mounted on a backing?*

A. Yes, sir."

This, it will be seen, is not the process of the issue, but the Young process, the use of thin-walled cylinders, which are subsequently mounted on proper supports, This is not the successful process, but the one which Lambert says was inoperative. Most assuredly, the process described by Hamilton is not that of the issue. The essential thing is omitted.

Hamilton's testimony was not affected on re-direct. He was asked (Re-d. Q. 1) :

"Do you mean by your last two answers to state that the celluloid ring which you saw formed, or was explained to you by this process, was so thin that it would not stand up ?

A. *It is really impossible for me to tell you as to whether he formed the impression on the thin ring and then backed it up, or backed it up first.*"

We submit, therefore, that Lambert's claim of conception in 1896 and reduction to practice in 1897 must be disregarded, because the only witnesses produced to support him fails to corroborate such of his evidence as relates to the essential feature in the controversy, but on the contrary does support him only with reference to the work which Young had already described. With the work of Lambert prior to the Edison application eliminated, as we believe it should be, Edison must, of course, prevail on the filing date of his application alone. The Examiners-in-Chief, after carefully reviewing the testimony by Lambert, say :

" And there is no testimony that any of the records made by him in 1897 were successful in use. And not one of them is produced.

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"He describes in his patent the making of records fromthin plates and gives the reason why they would not produce true records, and yet he has no evidence certainly establishing that he had in 1897 worked this process in such a manner as to produce a thick record, of commercial thickness, by pressure within the matrix. There is nothing more proven in 1897 than the old thin, paper-thickness ring, with cemented joints, which he had been making since the fall of 1893, made by the first devised crude, extemporized apparatus.

"We cannot regard a process which has not been executed to make the product which his patent calls for as reduced to practice.

"He had conceived of a process the same in general steps as this, which would form rings too thin for use as records. But he had not then conceived of the changes by which that process was afterwards converted into one which will make the stable rings of commercial size, length and thickness, which his perfected exhibits present and which his patent calls for. When that was first done is not proven. It is proven that none were put on the market until after his application was filed, which was more than two years after his October, 1897, experiment in the presence of Hamilton. *His own conduct is ample proof that he did not have this process until after the summer of 1900.*"

We submit, therefore, in view of all the facts, that the view of the Examiners-in-Chief is that which must be accepted:

"The conclusion is inevitable that his exhibition to Hamilton in 1897 was one of an unsuccessful experiment, and that it was long after that when he had obtained an apparatus fit to make records of commercial length and thickness, carrying records which reproduced the sound as excellently as the original record, or had conceived of and practiced the details of the process necessary to be followed in working the proper apparatus.

"A process is not perfected until it is wrought to effect its result; nor when its result is a product, until it has produced the perfected product fit for industrial use.

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> "That affair of 1897 was not a reduction to practice of the process of this issue. It can only with difficulty be accepted as a disclosure of a conception of the issue.
>
> "If so accepted, Lambert has a conception only prior to Edison's application."

It, therefore, follows, as the Examiners-in-Chief say, "that Edison was the first to conceive, to reduce to pracetice and to file his application," and he should, therefore, prevail.

Lambert's Reasons of Appeal.

1. The first and second reasons of appeal presented by Lambert relate to the question of priority of invention, and need not be further discussed.

2. Lambert's third reason of appeal is thus stated: "The Examiners further erred in not holding that Edison was unduly negligent in postponing his disclosure to the public, and making the claim, which is the count in issue."

We know of no authority under which an applicant is required to file an application where public use or public sale is not involved, or to present a particular claim in his application, or is held to forfeit any right or privilege by his failure to make such a claim, so that this reason of appeal is quite unintelligible. Lambert refers to no precedent for the particular argument, either in his appeal or in his briefs below. It is true that in the brief before the Examiner of Interferences reference was made to *U. S. Rifle & Cartridge Co. vs. Whitney Arms Co.* and *Consolidated Fruit Jar Co. vs. Wright*, but both of these prior decisions have reference to the question of abandonment prior to the *application, where intervening rights accrued.* In the present case the Edison application was filed long before Lambert's actual or

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technical reduction to practice, as determined by the board; and, having completely disclosed the invention, Edison could at any time, during the pendency of his application, claim it in any language he sees fit. Furthermore, we call the Commissioner's attention to the fact that the making by Edison of Lambert's claim, on the suggestion of the Examiner, did not broaden the scope of the application in the slightest particular, but that, on the contrary, the claim of the issue is the most specific claim which appears in the Edison case. Claims stand allowed to Edison which completely dominate the issue. On this point the Evaminer of Interferences, in his decision, says:

> "Counsel for Lambert contends that Edison has forfeited his rights to a patent by reason of the lapse of time between his reduction to practice and the filing of his application. But this contention is not well founded, for the reason that there is no evidence of inaction on the part of Edison in perfecting his invention. Moreover, nobody had entered the field and given the invention to the public. Lambert does not claim to have given anything to the public until after the filing of his application, which was a year subsequent to the filing of Edison's application."

And the Examiners-in-Chief say:

> "The right to the invention was vested in Edison by actual invention of and industrial use of the invention prior to the application for that patent.
>
> Edison cannot be held to have forfeited the invention to Lambert by failure to file his application, for he filed first, nor by failure to make the claim, for he made it so soon as he knew of Lambert's patent covering the claim."

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3. The fourth and fifth reasons of appeal relate to the manufacture of celluloid records, and have already been fully discussed.

4. The sixth and tenth reasons of appeal relate to the question of interference in fact and need no further consideration on our part.

5. Lambert's seventh reason of appeal alleges generally that the Examiners-in-Chief should have held that Edison's material is not the equivalent of Lambert's. We have already called attention to the fact that the only materials referred to by Lambert are cellulose and vulcanized rubber, although Lambert now claims that reference to cellulose is erroneous and that *celluloid* was intended. We have also before pointed out that Edison in his application refers specifically to vulcanized rubber and also to celluloid, as well as to numerous other materials. We therefore fail to see any ground for a serious consideration of this point.

6. The eighth reason of appeal alleges generally that the Examiners-in-Chief should have held that Edison's process and apparatus cannot "accomplish the object of Lambert's invention." Lambert's object, as stated in his patent, is "to produce a simple, economical and efficient method for constructing infrangible record cylinders." Edison's proofs show that his process is completely operative in connection with celluloid records, if this is what Lambert means by "an infrangible record cylinder," and the Examiners-in-Chief specifically found that in 1899 Edison "made celluloid records by this process." Furthermore, we again call attention to the fact that so far as the issue is concerned, it is not limited in the slightest particular to any specific material.

7. Lambert's ninth reason of appeal alleges error in the decision of the Examiners-in-Chief "in holding that

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Lambert has no case in his pleadings." It is only necessary for us to call the Commissioner's attention to the cross-examination of the witness Hamilton for a full confirmation of the decision of the Appeal Board on this point. Hamilton was the only witness who pretended to corroborate Lambert, and he failed to remember whether the process which was carried out in his presence was that of the Young patent or of the Lambert patent. The statement of the Examiners-in-Chief that "Lambert's case is not so strong as his pleadings" was therefore entirely justifiable.

Conclusion.

The decision of the Examiners-in-Chief should be affirmed.

Respectfully submitted,

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